THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 40

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM H. GUMPRECHT

Appeal No. 95-1757
Application 07/809,152[1]

ON BRIEF

Before JOHN D. SMITH, GARRIS, and OWENS, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-4, 7, 8, and 10-19, which are all of the claims remaining in the application.

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[1] Application for patent filed December 16, 1991. According to appellant, this application is a continuation of Application 07/477,737 filed February 9, 1990, now abandoned.

The subject matter on appeal relates to a process for manufacturing a hydrochlorofluoropropane which includes the step of contacting a hydrochlorofluoropropane precursor with an antimony pentahalide having as the halogen component a significant majority of fluorine and very little if any chlorine to thereby produce a hydrochlorofluoropropane substantially free of perhalogenated or carbon-carbon cleavage products. This appealed subject matter is adequately illustrated by claims 1, 13 and 17.

1. A process for manufacturing a hydrochlorofluoropropane comprising the steps of:

(a) contacting a hydrochlorofluoropropane precursor with $SbF_{5-y}Cl_y$, where y is less than 1.0, at a temperature of from about 50°C to about 100°C for sufficient time to effect a degree of halogen exchange of p under conditions wherein the number of moles, n, of $SbF_{5-y}Cl_y$ per mole of said hydrochlorofluoropropane precursor is such that (5-y)-(p/n) is at least 3.5, thereby producing a hydrochlorofluoropropane substantially free of perhalogenated or carbon-carbon cleavage products; and

(b) recovering said hydrochlorofluoropropane.

13. A process for manufacturing a hydrochlorofluoropropane comprising the steps of:

(a) contacting at least one hydrochlorofluoropropane precursor having a general formula of $C_3HCl_{7-x}F_x$, wherein x = 2 to 5 and H is located at a terminal carbon atom, with SbF_5, under conditions which substantially eliminate formation of perhalogenated products; and

(b) recovering a mixture containing at least one hydrochlorofluoropropane.

17. The process of Claim 13 or Claim 14 further comprising regenerating said antimony pentahalide with hydrogen fluoride.

The references relied upon by the examiner as evidence of obviousness are:

Benning et al. (Benning)	2,490,764	Dec. 13, 1949
Davis	3,240,826	Mar. 15, 1966

Claims 1-4, 7 and 12-19 stand rejected under the second paragraph of 35 USC 112 for failing to particularly point out and distinctly claim the subject matter which the appellant regards as his invention.

Claims 1-4, 7, 8 and 10-19 (i.e., all of the appealed claims) stand rejected under 35 USC 103 as being unpatentable over Davis in view of Benning.

Rather than reiterate the respective positions advocated by the appellant and the examiner concerning the above noted rejections, we refer to the brief and to the answer for a complete exposition thereof.

For the reasons set forth below, we will not sustain either of the rejections before us on this appeal.

The examiner considers claims 1-4, 7 and 12 to be indefinite under the second paragraph of § 112 because the antimony pentahalide formula of these claims embraces compounds having a relatively high chlorine content (e.g., wherein $_y$ equals 0.99) which would be expected to produce perhalogenated or

carbon-carbon cleavage products which is contrary to, and thus confusing with respect to, the claim 1 recitation "producing a hydrochlorofluoropropane substantially free of perhalogenated or carbon-carbon cleavage products". We cannot agree with the examiner's position on this matter. Although the antimony pentahalide formula of these claims may theoretically embrace compounds having a relatively high chlorine content, it is clear that such compounds are excluded from the claims if they produce perhalogenated or carbon-carbon cleavage products by virtue of the aforenoted claim 1 recitation "producing a hydrochloro-fluoropropane subtantially free of perhalogenated carbon-carbon cleavage products". Thus, the conflict and concomitant indefiniteness perceived by the examiner does not actually exist.

The examiner also believes that claims 13-19 are indefinite under the second paragraph of § 112 because independent claims 13 and 14 recite "SbF_5" whereas dependent claims 17-19 recite "said antimony pentahalide". More particularly, the examiner believes indefiniteness is created because the independent claims recite a pentafluoride specifically in contrast to the depend claims which recite a pentahalide generally. Clearly it would be desirable for the dependent claims to employ the same terminology as the independent claims, and therefore we encourage the appellant and

the examiner to effect amendment of dependent claims 17-19 so that they recite -- said SbF_5 -- rather than "said antimony pentahalide". Nevertheless, it is reasonably clear that the recitation "said antimony pentahalide" of dependent claims 17-19 refers to the "SbF_5" which is recited in independent claims 13 and 14. This reasonable clarity satisfies the requirements in the second paragraph of § 112.

In light of the foregoing, we will not sustain the examiner's rejection of claims 1-4, 7 and 12-19 under the second paragraph of 35 USC § 112.

Concerning the § 103 rejection, the examiner has expressed two alternative positions in support of his obviousness conclusion. On page 5 of the answer, the examiner expresses one position as follows:

> The application of the old process of Davis to the analogous starting material of the instantly claimed process to obtain a result consistent with the teaching of Davis would have been obvious to one of ordinary skill in the art. In re Durden, 226 U.S.P.Q. 339.

We do not consider this position to be well taken. We find no evidence in the reference to Davis and no rationale in the case of In re Durden which establishes a prima facie case of obviousness vis à vis the appealed claims. From our perspective, the here claimed process distinguishes over the process of Davis not just in terms of starting material as the examiner believes

but also in terms of resulting product including the here claimed requirement that the hydrochlorofluoropropane product be substantially free of perhalogenated and/or carbon-carbon cleavage products. We do not share the examiner's view that the appellant's claimed process would have been obvious over the process of Davis under a Durden rationale.

On page 6 of the answer, the examiner expresses the following alternative position in support of his obviousness conclusion:

> Furthermore, the use of SbF_5 as taught by Benning, in the process of Davis would have been obvious to one of ordinary skill in the art because there would have been a reasonable expectation that the SbF_5 of Benning would have resulted in the same halogen exchange when used in the related process of Davis.

From our perspective, however, the processes of Davis and Benning differ from one another in many significant respects. For example, Davis' process fluorinates a polyhaloethane whereas Benning's process fluorinates a chloride and/or floride organic compound having at least three carbon atoms. Additionally, the antimony pentahalide compound most preferred for use in Davis' process is the very antimony pentahalide compound excluded by the appealed claims. While Benning uses the here claimed antimony pentahalide in his process, the conditions (e.g., temperatures) of this process differ significantly from those of Davis. In light of the differing conditions and reactants, an artisan with

ordinary skill would not have had a reasonable expectation for success in using Benning's antimony pentafluoride in the process of Davis as the examiner believes. Even if antimony pentafluoride were used in Davis' process, the result would comprise a polyhaloethane reactant rather than the appellant's claimed hydrochlorofluoropropane precursor.

In short, Davis and Benning contain no teaching or suggestion for combining their respective disclosures in such a manner as to result in the here claimed process including the here claimed requirement of producing a hydrochlorofluoropropane substantially free of perhalogenated and/or carbon-carbon cleavage products. It follows that we cannot sustain the examiner's § 103 rejection of claims 1-4, 7, 8, and 10-19 as being unpatentable over Davis in view of Benning.

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH
Administrative Patent Judge)
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